Problem 1:

Applied far-field stress, $\sigma^{\infty} = 200$ MPa
Half of crack length, $a = 0.025$ m
Elastic modulus, $E = 192000$ MPa
Poisson's ratio, $\nu = 0.2$
Shear modulus, $\mu = E/[2(1+\nu)] = 80000$ MPa

Using EXCEL,

r/a	σ_y/σ^{∞}	$u_y/2a$	r	σ_y	u_y	$K_{I,SC}$	$K_{I,DC}$	$K_{I,E}$	e_{SC}	e_{DC}
	($\theta = 0$)	($\theta = \pi$)	m	MPa	m	MPa$\sqrt{m}$	MPa$\sqrt{m}$	MPa$\sqrt{m}$	%	%
0.005	11	9.99E-05	0.00013	2200	4.995E-06	61.655	55.994	56.050	-10.000	0.100
0.01	8.07	0.000141	0.00025	1614	7.05E-06	63.968	55.883	56.050	-14.127	0.298
0.02	6	0.000199	0.0005	1200	9.95E-06	67.260	55.770	56.050	-20.000	0.500
0.04	4.54	0.00028	0.001	908	0.000014	71.974	55.487	56.050	-28.411	1.005
0.06	3.89	0.000341	0.0015	778	1.705E-05	75.529	55.175	56.050	-34.754	1.562
0.08	3.5	0.000392	0.002	700	0.0000196	78.470	54.929	56.050	-40.000	2.000
0.1	3.24	0.000436	0.0025	648	0.0000218	81.215	54.644	56.050	-44.897	2.507
0.15	2.83	0.000527	0.00375	566	2.635E-05	86.880	53.929	56.050	-55.005	3.783
0.2	2.58	0.0006	0.005	516	0.00003	91.459	53.174	56.050	-63.174	5.132
0.25	2.41	0.000661	0.00625	482	3.305E-05	95.516	52.395	56.050	-70.413	6.520

Note:
1. $K_{I,E} = \sigma^{\infty}(\pi a)^{0.5} = 200(\pi \times 0.025)^{0.5} = 56.05$ MPa$\sqrt{m}$
2. For error estimation: + = underestimated; - = overestimated